Consultation Number: F/NWR/2003/00357

Endangered Species Act (ESA) Section 7 Consultation - Supplemental Biological Opinion

Action Agency: National Marine Fisheries Service

Species/ESUs Affected:

Species	ESU	Status	Federal Register Notice	
Chinook Salmon (*O. tshawytscha*)	**Snake River Spring/Summer**	Threatened	57 FR 14653	4/22/92
	Lower Columbia River	Threatened	64 FR 14308	3/24/99
	Upper Willamette River	Threatened	64 FR 14308	3/24/99
	Upper Columbia River Spring	Endangered	64 FR 14308	3/24/99
Steelhead (*O. mykiss*)	**Upper Columbia River**	Endangered	62 FR 43937	8/18/97
	Snake River Basin	Threatened	62 FR 43937	8/18/97
	Lower Columbia River	Threatened	63 FR 13347	3/19/98
	Upper Willamette River	Threatened	64 FR 14517	3/25/99
	Middle Columbia River	Threatened	64 FR 14517	3/25/99

Activities considered: To evaluate the effects of more specific management guidelines introduced in response to exceeding harvest rate limits on steelhead ESU's in the Columbia River non-Indian commercial spring chinook selective fishery in 2002.

Consultation conducted by: The Sustainable Fisheries Division (SFD), Northwest Region. Consultation Number: F/NWR/2003/00357

The U.S. v Oregon parties entered into a 5-year Agreement in 2001 regarding winter, spring, and summer season fisheries (U.S. v Oregon parties 2001), and the National Marine Fisheries Service (NMFS) wrote the associated Biological Opinion (NMFS 2001) . NMFS reinitiated its consultation on the 2001 Agreement because in 2002 the incidental take associated with one of the fisheries covered by the agreement exceeded specified take exemptions, and because similar fisheries are planned for 2003 and beyond. In particular, the non-Indian commercial spring chinook tangle-net selective fishery exceeded allowable limits for steelhead ESU's. In this supplemental biological opinion, NMFS reviews the pertinent and necessary additional information regarding the management of the fishery in question. This supplemental biological opinion has been prepared in accordance with section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531 et seq.). A complete administrative record of this consultation is on file with Sustainable Fisheries Division in Seattle, Washington.

Approved by: for D. Robert Lohn, Regional Administrator

Date: JUL 11 2003

[**Expires on:** Not Applicable]

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BACKGROUND

The U.S. v Oregon parties entered into an Agreement in 2001 regarding winter, spring, and summer season fisheries (U.S. v Oregon parties 2001). NMFS conducted a section 7 consultation on the Agreement and associated Biological Assessment and Section 10 permit application submitted by the tribes and states. One of the provisions considered during the consultation was that the combined incidental mortality rate in all non-Indian fisheries would be 2% or less for each of the affected steelhead ESUs. NMFS concluded in its Biological Opinion that the implementation of the fisheries as proposed would not jeopardize any of the affected ESUs (NMFS 2001).

In 2002, the states of Oregon and Washington implemented their first full fleet commercial spring chinook selective tangle net fishery, contemplated in the Agreement. The fishery relied on the use of tangle nets for live capture and required the release of all steelhead and unmarked chinook. As the fishery progressed, it became apparent that the impacts on steelhead were much greater than anticipated – this was confirmed through post-season analysis, as described below.

The U.S. v. Oregon Technical Advisory Committee (TAC) tangle net fishery report (TAC 2003) provides specific estimates of steelhead mortality rates associated with the 2002 fishery. TAC estimated that the incidental mortality rate on winter steelhead during the 2002 fishery (including Upper Willamette steelhead and the winter run portions of the Lower Columbia River and Middle Columbia River ESUs) likely ranged between 5.6% - 14.5%. Because the incidental take associated with this fishery in 2002 exceeded the take exemptions of the original consultation, and because of the anticipated fishery for 2003 and beyond, NMFS reinitiated its consultation of the 2001 Agreement.

The Washington State Department of Fish and Wildlife (WDFW) and Oregon Department of Fish and Wildlife (ODFW) have taken a number of steps to modify the management guidelines for the commercial spring chinook tangle-net selective fishery. These additional management guidelines are intended to reduce impacts on winter steelhead and ensure that this fishery remains within the constraints of the Endangered Species Act (ESA) limits specified in the Agreement and associated Biological Opinion. These additional management guidelines amend the Agreement by describing in more detail how the non-Indian commercial spring chinook tangle-net selective fishery will be managed. Section 1.3 below provides a summary of the additional management guidelines that were used for 2003 (LeFleur 2003). Although a few of the details may change in future years in response to new information, the states have indicated their intent to use similar management guidelines in future years as well.

Consultation Number: F/NWR/2003/00357

SUPPLEMENTAL BIOLOGICAL OPINION

1.0 DESCRIPTION OF THE PROPOSED ACTION

1.1 Proposed Action

There is no new action being considered in this supplemental biological opinion. This supplemental opinion analyzes the additional meassures that have been taken to manage the non-Indian commercial spring chinook tangle-net selective fishery. The objective of these new management guidelines are provide greater assurance that the total incidental take of steelhead and chinook salmon from all fisheries in the Agreement stay within the ESA impact limits specified in the 2001 Opinion.

1.2 Action Area

The action area as specified in the original opinion encompasses the Columbia River and its tributaries from its mouth upstream to the Wanapum Dam, and in the Snake River up to the Washington/Idaho border. In this supplemental opinion, NMFS' analysis focuses on the area downstream of Bonneville Dam.

1.3 Additional Management Guidelines

The incidental take limit for all listed chinook and steelhead ESU's in the winter/spring/summer season fisheries remain as originally described in the Agreement (U.S. v Oregon parties 2001) and associated Biological Opinion (NMFS 2001). However, some additional management guidelines were introduced to ensure compliance with the incidental impacts limits of the 2001 opinion (LeFleur 2003). As new information becomes available, the details may change, but the same management principles and guidelines will continue to apply in the future for non-Indian commercial spring chinook tangle-net selective fishery.

1.3.1 Management of Steelhead Impacts

In order to minimize the risk of exceeding the allowable incidental take limit for steelhead after 2002, the following additional management provisions were implemented in 2003 for the non-Indian commercial spring chinook tangle-net selective fishery. These or similar measures will be implemented in the future to ensure that there is a management target related to the incidental take limit of steelhead that can be used in-season to adjust the fishery as necessary to stay within the specified take limits.

1.3.1.1 TAC will provide a pre-season runsize forecast for winter steelhead prior to the start of the fishery each year. Maximum allowable mortality rates will be based on a percentage of this preseason runsize estimate. Some steelhead ESUs have both, winter and summer run components. By managing for a mortality rate on winter steelhead, the mortality rate estimates will be conservative for those affected ESU's with both run components.

1.3.1.2 In 2003, the non-Indian commercial spring chinook tangle-net selective fishery was managed to limit wild winter steelhead mortality rate to 1.6%-1.8% (248 to 279 fish in 2003). This allowed for anticipated recreational fishery impacts and provided a buffer for management uncertainty.

1.3.1.3 In 2003, TAC recommended using a 35% long-term mortality rate for 8-inch mesh and a 20% for the 4 1/4 inch mesh for winter steelhead. These rates were applied to the estimated numbers of wild winter steelhead handled and released in the fishery in 2003. TAC will review 2003 long-term survival study results and use these to modify the mortality estimates to be used in 2004 and beyond, as appropriate.

1.3.1.4 In 2003, the fishery was monitored daily to estimate the number of steelhead and spring chinook handled, including the number of marked and unmarked fish. The ratio of steelhead observed versus the number of marked spring chinook observed in the fishery was multiplied by the number of spring chinook landed to estimate total number of steelhead handled in the fishery. Spring chinook landings were tallied the day following each fishing period. In 2003, one fishing period was almost all daylight hours of one day, followed by one full day closure, before the next fishing period.

1.3.1.5 In 2003, monitoring data and landing information was used to calculate impacts on wild winter steelhead, based on the projected run size of 15,500 fish and the assumption that 5%-25% of the steelhead caught are summer-run fish, and that 3.5% of the unmarked steelhead are hatchery-origin fish. Summer steelhead are assumed to range from 5% of the catch in February to 25% of the catch in late March.

1.3.1.6 In 2003, the expected sport fishery impacts on wild winter steelhead were expected to be less than 0.1%. Expected recreational fishery impacts will be specified preseason and used to set appropriate take limits for the commercial spring chinook tangle-net selective fishery.

1.3.1.7 The TAC will investigate the feasibility of in-season run size updates using counts at Willamette Falls and use them for future management if appropriate.

1.3.2 Management Actions to Minimize Steelhead Handle and Mortality

The following management provisions were in effect in 2003. As new information becomes available, some of the details may change, but the general principles will continue to apply for the duration of the agreement.

1.3.2.1 Large mesh nets (8-inch minimum mesh) were used during the late February 2003 time frame. The purpose was to reduce the overall handle of steelhead. Based on observations from previous winter season fisheries, the steelhead handle is greatly reduced using the larger mesh. A summary

of that information can be found in the "Joint Staff Compact Report" dated January 23, 2003.

1.3.2.2 Tangle nets with a maximum mesh size of 4 1/4-inch mesh were used during the March 2003 time frame. Based on analysis of steelhead size versus mesh size, it is estimated that approximately 96% of the steelhead will be tangled in this mesh size. Details of that analysis can be found in the TAC report titled "Steelhead Handle and Mortality Impacts in the 2002 Non-Indian Spring Chinook Tangle Net Fishery" dated January 22, 2003.

1.3.2.3 Fishing time during mid-March will be reduced. The fishery will be managed to have minimal days of fishing during this time frame when it is expected that wild steelhead will be in greatest abundance in the lower Columbia River.

1.3.2.4 Voluntary use of steelhead excluders by the commercial fishers was encouraged. The excluder panel is designed to be incorporated at the top of the net and will pass steelhead completely through without being captured. The excluder panel is defined as being a minimum of 5 feet in depth and the mesh size is ≥12 inches. On September 12, 2002, the Columbia River Compact[1] adopted a regulation that allowed for the use of an additional 25 fathoms of 4 1/4-inch mesh if an excluder panel was used. This use of an excluder panel is expected to be employed by a substantial portion of the fleet.

1.3.2.5 Use of recovery boxes, short soak times, and reduced net length were mandatory. These restrictions are the same as those in place in 2002 and were required during the entire winter/spring season. These measures will help increase the overall survival of fish that are released.

1.3.2.6 Fishing hours were primarily during daylight to maximize the on-board monitoring effort.

1.3.3 Monitoring Program

The following monitoring requirements were in effect in 2003. As new information becomes available, some of the details of the program may change, as appropriate, but monitoring will continue for the duration of the agreement.

1.3.3.1 The monitoring program in 2003 was similar to that conducted in 2002. A total of 16 monitors were employed to observe the fishery each day.

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[1]The Columbia River Compact is the entity charged with congressional and statutory authority to adopt seasons and rules for Columbia River commercial fisheries. In recent years, the Compact has consisted of the Oregon and Washington agency directors, or their delegates, acting on behalf of the Oregon Fish and Wildlife Commission (OFWC) and the Washington Fish and Wildlife Commission (WFWC). In addition, the Columbia River treaty tribes have authority to regulate treaty Indian fisheries. When addressing commercial seasons for salmon, steelhead, and sturgeon, the Compact must consider the effect of the commercial fishery on escapement, treaty rights, and sport fisheries, as well as the impact on species listed under ESA.

Details of the monitoring program can be found in the "Winter/Spring 2003 Selective Fishery Monitoring Plan" dated February 6, 2003 (TAC 2003).

1.3.3.2 The monitors were on-board the commercial boats and collect a variety of data, including numbers of steelhead and spring chinook handled, mark rate, condition at capture, and condition at release.

1.3.3.3 Data were summarized the day following each fishing period and reported to the fishery managers and the TAC.

1.3.3.4 In 2003, WDFW continued to study the long-term mortality rate for spring chinook as well as investigating long-term mortality rates for steelhead. These data will be analyzed and the results used for managing fisheries in 2004 and beyond.

2.0 STATUS OF THE SPECIES AND CRITICAL HABITAT

For a detail discussion of species description, critical habitat designation, life histories, population dynamics and distribution, refer to chapter 2.0 in the original opinion (NMFS 2001). In this section, species status is summarized, particularly to update abundance information for 2002 and as estimated for 2003.

2.1 Chinook Salmon

The upriver spring chinook, Upper Columbia River wild spring chinook, Snake River naturally produced spring chinook, upriver summer chinook and Snake River naturally produced summer chinook salmon returns were record high in 2001 (Table 1). The 2002 returns remained high, with the second-to-largest on record observed returns for upriver spring and Snake River naturally produced spring chinook salmon that year. The returns in 2003 are also lower than the last two years, but still generally higher than returns observed during the last 20 years, except for Upper Columbia River naturally produced spring chinook salmon. The Willamette spring chinook Columbia River mouth runsize was near record in 2002 and another strong return is expected in 2003.

2.2 Steelhead

Steelhead stocks in the Columbia Basin have traditionally been distinguished as summer- or winter-run stocks based on state of sexual maturity and time of river entry. All native fish returning to the Upper Willamette have a late winter-run return timing. Steelhead returning to the Lower Columbia River are primarily winter-run fish while those returning to the Middle Columbia River are primarily summer-run fish. All steelhead returning to the Upper Columbia River and the Snake River basin are considered summer-run steelhead.

Because of run timing of listed steelhead ESU's and the timing of the fishery in question, the information presented in this section of the supplemental opinion is limited to abundance trends of wild winter steelhead. For a detailed discussion on the status of the listed ESU's, population dynamics, refer to the original opinion (NMFS 2001).

The total wild winter steelhead in 2002 was estimated at 31,400 fish (TAC 2003). The 2002 winter steelhead runsize was a record high. The forecast for 2003 is 15,500 (TAC 2003), which is the second largest since at least 1993 (Figure 1).

Table 1. River mouth runsize for Upriver spring chinook, UCR naturally produced spring chinook, and Snake River naturally produced spring and summer chinook salmon.

	Upriver Spring at River Mouth[1]	Upriver Summer at River Mouth[1]	UCR natural Spring at River Mouth[1]	SR natural Spring at River Mouth[1]	SR natural Summer at River Mouth[1]	Willamette Spring Chinook at River Mouth[3]
1979	48,703	28,035	8,243	7,767	2,813	49,198
1980	53,207	26,983	8,476	13,108	3,064	43,333
1981	63,766	22,381	10,135	14,848	4,337	56,271
1982	71,252	20,363	7,817	18,747	5,522	77,964
1983	57,826	18,231	8,743	14,437	5,078	62,249
1984	48,658	22,464	8,248	7,215	4,678	84,240
1985	86,498	24,308	10,805	8,222	2,853	68,090
1986	120,627	26,439	8,242	12,984	3,478	73,552
1987	100,164	33,323	7,300	12,265	3,326	93,593
1988	97,237	31,486	5,504	14,356	3,306	118,112
1989	83,402	28,830	6,303	6,981	3,124	114,929
1990	99,486	25,023	5,781	6,084	4,359	130,588
1991	59,883	18,919	2,660	5,450	3,550	109,929
1992	89,969	15,150	4,852	16,198	533	75,007
1993	111,758	22,226	5,127	7,740	4,169	65,934
1994	21,075	17,711	1,444	2,067	246	49,580
1995	10,197	15,052	253	1,791	498	42,564
1996	51,530	16,102	330	3,897	2,717	34,756
1997	114,124	27,977	1,125	4,750	5,533	35,302
1998	38,376	21,468	423	9,620	4,166	45,139
1999	38,700	26,229	673	1,366	2,004	54,202
2000	178,640	30,651	1,615	5,741	4,094	57,500[4]
2001	416,468	76,377	11,970	27,579	12,566	80,300[4]
2002	295,111	129,012	6,291	60,233	4,433	121,700[4]
5-year average	**193,459**	**56,748**	**4,194**	**20,908**	**5,452**	**71,768**
2003[2]	*145,400*	*87,600*	*1,300*	*25,000*	*7,700*	109,800[4]

[1] winter/spring/summer BA tables
[2] pre-season forecasts
[3] UWR FMEP
[4] 2003 Joint Staff Report - January 23, 2003

2.3 Critical Habitat

Critical habitat for Upper Columbia River, Snake River and Lower Columbia River chinook salmon, and Upper Willamette River, Lower Columbia River, Middle Columbia River, Snake River, and Upper Columbia River steelhead ESUs was designated February 16, 2000 (65 FR 7764); this designation was vacated by the District of Columbia District Court and remanded to NOAA Fisheries for new rulemaking pursuant to a court order in May, 2002. However, the

proposed harvest activities will still take place in the area that was originally designated as critical habitat. Thus, in the absence of a new rule designating critical habitat for these ESUs, the analysis of the original opinion remains pertinent as an evaluation of the effects of the proposed actions on the species' habitat to determine whether those actions are likely to jeopardize the

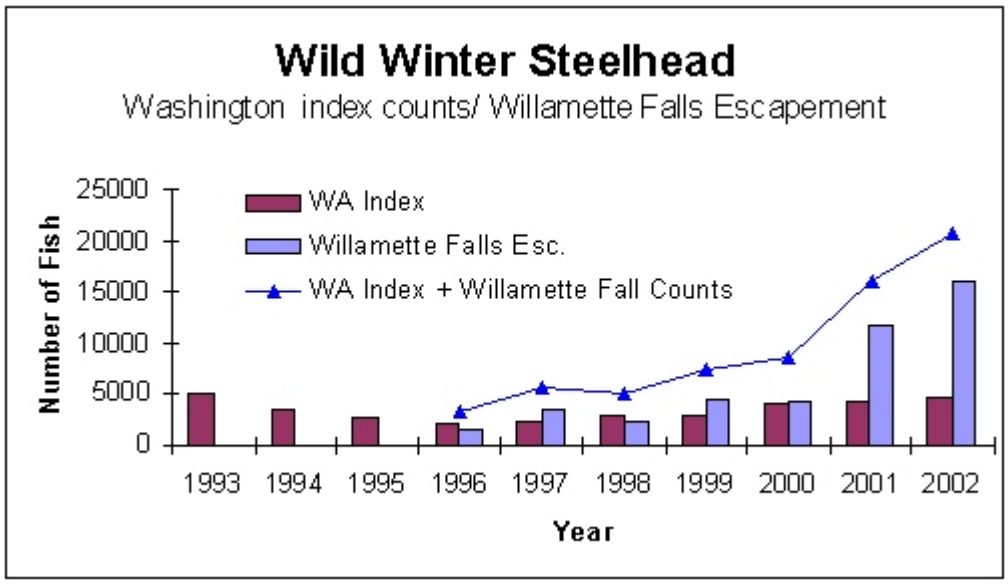

Figure 1 Wild winter steelhead counts and escapement

species' continued existence. More detailed habitat information (i.e., specific watersheds and habitat features and special management considerations) for these ESUs can be found in the critical habitat designation which was vacated and remanded to NOAA Fisheries.

3.0 ENVIRONMENTAL BASELINE

For a detailed description of the action area, the biological requirements in the action area, and factors affecting species' environment in the action area, refer to chapter 5.0 in the original opinion (NMFS 2001). The environmental baseline has not changed since the promulgation of the 2001 Biological Opinion. In brief, the biological requirements of the listed ESUs are still not being met under the environmental baseline. Their status is such that there must be a substantial improvement in the environmental conditions over those currently available. The suite of land-use, hydropower, harvest, and hatchery activities throughout the range of the affected ESUs continue, as do the combination of potential benefits and degradations described in the original opinion. Any further degradation of these conditions would increase the amount of risk the listed ESUs presently face under the environmental baseline; improvements in the quality of the environment, if implemented, are likely to take a substantial period of time to take effect. Consistently higher returns in recent years suggest that baseline conditions have improved, though it is uncertain as to which sectors of the environment may be responsible for this improvement or how long-lasting this improvement may be.

4.0 EFFECTS OF THE PROPOSED ACTION

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA and in 50 CFR §402.02. This section of the supplemental biological opinion applies those standards in determining whether the proposed additional management guidelines are likely to jeopardize the continued existence of one or more of the threatened or endangered salmon and steelhead species (ESUs) that may be adversely affected by the non-Indian spring chinook selective fishery. This analysis considers the effects of the proposed additional management guidelines and compares them against the current status of the species, including the environmental baseline, to determine if the proposed action will appreciably reduce the likelihood of survival and recovery of listed salmon or steelhead in the wild.

The co-managers are not proposing to change the allowable impact levels specified in the Agreement (U.S. v Oregon parties 2001) and associated Biological Opinion (NMFS 2001) for any listed ESU in the Columbia River basin. Nor are they proposing new fisheries. The additional management guidelines do not add to the level of impact already assessed in the 2001 Opinion. The proposed additional management guidelines are intended to explicitly modify the management of the non-Indian spring chinook commercial tangle net selective fishery to better ensure that all fisheries carried out under the Agreement are in compliance with the take limits of the 2001 Biological Opinion. Specifically, these additional management guidelines are intended to reduce the risk of exceeding the take limit for steelhead in 2003 and in future years.

The 2001 Opinion (NMFS 2001) provides an analysis of the effects on listed chinook and steelhead and their habitat and specifies the take limits. This section of the supplemental opinion evaluates the effects of the specific management guidelines outlined in section 1.3, which were implemented in 2003, and their likely success in reducing the risk of exceeding the take limits for listed steelhead ESUs set by the 2001 Opinion.

4.1 Effects on Chinook

The states of Oregon and Washington will continue to manage the spring chinook commercial fishery using selective fishery regulations, as described in their the Interim Agreement (U.S. v Oregon parties 2001), the 2001 Biological Opinion (NMFS 2001), as modified by the more recent supplemental Biological Assessment (LeFleur 2003).

In 2002, the first year of the commercial spring chinook tangle-net selective fishery, a total of 28,727 spring chinook were handled during this fishery, of which 14,238 were kept and 14,489 were released (JSR 2003). Based on CWT and Visual Stock Identification (VSI) data, the kept spring chinook catch was comprised of 8,237 upriver stock; 5,242 Willamette stock; 473 Cowlitz, Kalama, Lewis, and Sandy stock; and 286 Select Area Fishery Enhancement (SAFE) stock, while the released catch was comprised of 12,396 upriver stock; 958 Willamette stock; 28 Cowlitz, Kalama, Lewis, and Sandy stock; and 1,105 SAFE stock (JSR 2003). The large number of upriver and SAFE stock spring chinook released in this fishery in 2002 reflect the fact that not all hatchery fish returning to these areas that year were mass marked with an adipose fin-clip. The impact rate on wild upriver spring chinook in 2002 was 0.70% which is similar to the

preseason management guideline of 0.68% for 2002 (JSR 2003). Impacts on naturally produced Willamette spring chinook in 2002 totaled 0.60% (JSR 2003). In both cases the overall impact rate was 2.0%, one third of which was allocated to the commercial tangle-net fishery.

In 2003, the second year of the commercial spring chinook tangle-net selective fishery, and the first year using the additional management guidelines which are the subject of this Supplemental Biological Opinion, a total of 5,667 spring chinook were handled during this fishery, of which 3,173 were kept and 2,494 were released (Melcher 2003). Based on CWT and VSI data, the kept spring chinook catch was comprised of 2,012 upriver stock; 918 Willamette stock; 137 Cowlitz, Kalama, Lewis, and Sandy stock; and 106 SAFE stock while the released catch was comprised of 2,203 upriver stock; 234 Willamette stock; 7 Cowlitz, Kalama, Lewis, and Sandy stock; and 50 SAFE stock (Melcher 2003). Most of the spring chinook released in this fishery were of upriver origin. The fishery targets unlisted Willamette spring chinook. The catch composition (kept and released) reflect the fact that upriver chinook returning to the fishing area in 2003 were early or that the Willamette spring chinook were late. The impact rate on naturally produced upriver spring chinook in 2003 was 0.668%, which is greater than the guideline of 0.59% for this fishery, but less than the total allowable impact of 2% (Melcher 2003). Impacts on wild Willamette spring chinook in 2003 totaled 0.295% (Melcher 2003). Catch-and-release mortality associated with 8-inch and 4.25-inch mesh size for wild spring chinook are currently estimated at 50% and 25%, respectively (TAC 2003). Recreational fisheries were also managed inseason with time and area closures to ensure that the overall impact rate of 2% was not exceeded.

4.2 Effects on Steelhead

The states of Oregon and Washington will continue to manage the spring chinook commercial fishery using selective fishery regulations, as described in their the Interim Agreement (U.S. v Oregon parties 2001), the 2001 Biological Opinion (NMFS 2001), as modified by the more recent supplemental Biological Assessment (LeFleur 2003).

All steelhead handled in the commercial spring chinook tangle-net selective fishery are to be released. Handle-related mortality associated with this selective commercial fishery counts against the non-Indian catch allocation. Catch-and-release mortality associated with 8-inch and 4.25-inch mesh size for wild winter steelhead are currently estimated at 35% and 20%, respectively (TAC 2003). The catch-and-release long-term mortality associated with 8-inch and 4.25-inch mesh size for winter steelhead currently used may change as a result of additional data collected in 2003 and beyond.

4.2.1 Effects of the 2002 Fishery (Not Including the Additional Management Guidelines)

Steelhead catch in the commercial spring chinook tangle-net selective fishery greatly exceeded the preseason catch expectations due to the extremely large winter steelhead run in 2002, the timing of the fishery, and the gear employed in the fishery. A total of 20,900 steelhead were handled in this fishery, of which 8,400 were marked and 12,400 were unmarked (JSR 2003). Unmarked steelhead include wild fresh run winter and summer steelhead, unmarked hatchery fresh run winter and summer steelhead, and spawned out winter and summer steelhead kelts.

The wild winter steelhead total terminal run size (tributary returns) for 2002 is estimated to have been about 34,100 fish. The total number of wild winter steelhead mortalities in the 2002 tangle net fishery is estimated to have ranged between 1,800 and 5,800 fish (TAC 2003). The estimated impact rate on wild winter steelhead for the affected ESU's in 2002 therefore ranges from 4.9% to 14.5% (TAC 2003). Additionally, there were impacts on wild winter steelhead in the mainstem sport fishery during March and April of 2002. The total number of release mortalities is estimated to have been 22 fish in the 2002 sport fishery. The impact rate from the 2002 sport fishery was about 0.06%. Combined commercial and sport fishery impacts on wild winter steelhead in 2002 is estimated to have been between 5.0% and 14.6% (TAC 2003).

The TAC attempted to analyze impacts to wild summer steelhead for 2002; however, because of the presence of several ESUs and the difficulty in determining ESU-specific run reconstruction, the estimates are not as reliable as for winter steelhead. Impacts on wild summer-run steelhead stocks were likely less than 2%.

4.2.2 Effects of the 2003 Fishery (Including the Additional Management Guidelines)

The wild winter steelhead total terminal run size (tributary returns) for 2003 is estimated to have been about 15,500 fish. The total number of winter steelhead released in the 2003 fishery was 2,184, out of which 1,086 were natural-origin winter steelhead (Melcher 2003). The total number of wild winter steelhead mortalities in the 2003 tangle net fishery is estimated to have been 189 fish, or 1.538% of the river mouth runsize estimate (Melcher 2003). The states had allocated 1.6%-1.8% mortality rate to wild winter steelhead for this fishery in 2003. Upon reaching a 1.538% mortality rate mark, the states closed this fishery for the year.

Additionally, there are recreational fishery impacts on wild winter steelhead in 2003 that need to be considered. The total impact rate from the 2003 recreational fishery is expected to be less than 0.1% (pers. comm., from P. Frazier, WDFW to E. Patiño, NMFS, April 24, 2003). Combined commercial and recreational fishery impacts on wild winter steelhead in 2003 will be less than 2%.

The TAC will attempt to analyze impacts on wild summer steelhead post-season in 2003; however, because of the presence of several ESUs and the difficulty in determining ESU-specific run reconstruction the summer steelhead estimates are not as reliable as for winter steelhead. Impacts on wild summer-run steelhead stocks were likely less than 2%.

5.0 CUMULATIVE EFFECTS

The cumulative effects of the proposed action on listed species was assessed in the original opinion (NMFS 2001). Since the additional specific management guidelines are within the scope of the original opinion and would result in no additional impacts, the cumulative effects are expected to be the same as those previously analyzed. The status of the species, the environmental baseline, and cumulative effects of federal and non-federal actions within the action area remain the same as in the original opinion and associated Incidental Take Statement.

6.0 INTEGRATION AND SYNTHESIS OF EFFECTS

It is difficult to evaluate the effects of the commercial spring chinook tangle net fishery on individual steelhead ESU's. This fishery affects almost exclusively winter-run stocks of the Lower Columbia River, Middle Columbia River, and Upper Willamette River steelhead ESU's. Estimates of mortality rate for winter steelhead can be used as a surrogate for mortality rates to individual steelhead ESU's resulting from the implementation of this fishery, if we assume that impacts are proportionally distributed amongst winter-run stocks of all three affected steelhead ESU's. This approach is conservative for the Middle Columbia River steelhead ESU, and to some extent for the Lower Columbia River ESU because the summer stocks within the ESUs are subject to relative little harvest. Impacts on affected steelhead ESU's with summer-run stocks will therefore be considerably less than for the Upper Willamette River ESU which contains only winter-run steelhead stocks.

Several factors contributed to exceeding the allowable impact rate on steelhead ESU's in the 2002 commercial tangle net fishery, the most important of which was the lack of adequate management guidelines to be used inseason to limit the impacts to those specified in the 2001 opinion. The new management guidelines for this fishery introduced in 2003, including the requirement for a yearly wild winter steelhead runsize forecast, and a cap for allowable handle of steelhead each year, proved effective in regulating the fishery inseason in 2003. The mortality rate for wild winter steelhead in the 2003 tangle net fishery is estimated to be 1.538% of the river mouth wild winter steelhead runsize estimate (Melcher 2003). The states had allocated 1.6%-1.8% mortality rate to wild winter steelhead for this fishery in 2003. Upon reaching a 1.538% mortality rate mark, the states closed down this fishery for the year, leaving a large portion of the target unlisted spring chinook allocated to this fishery unharvested. The additional management guidelines introduced in 2003, which are the subject of this supplemental opinion, proved to be effective in limiting impacts on steelhead as required, while conducting the commercial tangle-net fishery targeting unlisted hatchery-origin spring chinook. In 2003, this fishery fell well short of the harvest goal for spring chinook salmon. The states have indicated their desire to continue to try to find ways to craft a selective commercial tangle net spring chinook fishery inside the take limits of the original biological opinion.

In 2002, when the commercial tangle net spring chinook fishery exceeded its allowable incidental take of steelhead ESU's, escapement for the affected steelhead ESU's was nonetheless high (Figure 1). The 2002 escapement for the wild winter steelhead for Washington index areas was the highest since 1993, and escapement for wild winter steelhead over Willamette Falls in 2002 was the highest since 1996 and probable near record high (Figure 1). Exceeding the allowable incidental take for the affected steelhead ESU's reduced escapements below what they would have been in 2002 by 3-13%, but additional management measures have been taken to provide reasonable assurance that this will not happen again.

Based on the analysis of the original opinion, NMFS concluded that fisheries managed by the terms of the Interim Agreement are not likely to jeopardize the continued existence of the salmon and steelhead ESU's in the action area. The additional management guidelines considered in this

supplemental opinion are intended to decrease the risk of exceeding the incidental take limit for salmon and steelhead contained in the original opinion (NMFS 2001), by providing additional management tools, such as preseason runsize forecast for winter steelhead and a cap for steelhead handle based on the expected runsize and the maximum allowed mortality rate of 2% for all non-Indian fisheries combined. By reducing impacts on wild winter steelhead to 2% or less, the impacts on wild summer steelhead will be considerably less than that and the conservation goal will be achieved for all ESU's.

7.0 CONCLUSION

After reviewing the current status of the listed ESUs considered in this opinion, the environmental baseline for the action area, the effects of the introduced management guidelines, and cumulative effects, it is NMFS' biological opinion that fisheries managed according to the modified Agreement are not likely to jeopardize the continued existence of the Upper Columbia River, Snake River spring/summer, or Lower Columbia River chinook salmon ESUs, Upper Willamette River, Lower Columbia River, Middle Columbia River, Snake River, or Upper Columbia River steelhead ESUs.

8.0 INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement (ITS).

The measures described below are non-discretionary; they must be undertaken by the action agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The action agencies have a continuing duty to regulate the activity covered in this incidental take statement. If the action agencies (1) fail to assume and implement the terms and conditions or (2) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the agencies must report the progress of the action and its impact on the species to NMFS as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

8.1 Amount or Extent of the Take

The amount or extent of the take described in the 2001 Opinion (NMFS 2001) remains unchanged. NMFS anticipates that listed species will be taken as a result of winter, spring, and summer season fisheries managed in future years by the terms of the Interim Agreement. The incidental take is expected to be in the form of catch and retention, or mortalities resulting from catch and release, or mortalities resulting from encounter with fishing gear, as a consequence of fishery activities. The amount of take is described in terms of a harvest rate or the percent of the run taken by the combined treaty Indian and non-Indian fisheries. This ITS was copied for the original opinion and has been modified where necessary. This ITS is therefore complete and supercedes that contained in the original opinion.

UCR spring chinook and Snake River spring/summer chinook salmon and winter steelhead are expected to be the primary management constraints, in most years, for the mainstem fisheries in that they will define the upper limit of allowable harvest. For Upper Columbia River spring chinook and Snake River spring/summer chinook, NMFS expects that the fisheries will be managed conservatively, but up to the specified limit of allowable harvest. In analyzing the anticipated effects for the other ESUs, NMFS considered both the outside limit of anticipated harvest rate (the maximum) and the expected harvest rates based on averages from recent years (NMFS 2001, Table 14). For these ESUs, NMFS continues to use the maximum recent years' harvest rates to define the upper limit of allowable take in the ITS even though it is unlikely that the resulting harvest rates will be that high. More likely, the actual harvest rate will vary around the average, and therefore be somewhat lower on the whole than the level authorized. NMFS' analysis is based on the authorized level.

The total harvest rate limit for natural-origin UCR spring chinook salmon ESU and the spring component of the Snake River spring/summer chinook salmon ESU in non-Indian and treaty Indian fisheries is defined by the harvest rate schedule shown in Table 13 of the 2001 Opinion (NMFS 2001). Allowable harvest rates will be determined, both annually and inseason, depending on the applicable run sizes. For 2003, based on preseason run size information, the applicable harvest rate limits were 2% and 9% for the non-Indian and treaty Indian fisheries, respectively.

For all of the remaining ESUs, the harvest rate limits for the treaty Indian fisheries are the maximums shown under the Treaty Indian Fisheries column in Table 14 of the 2001 Opinion (NMFS 2001). No take of spring chinook from the Lower Columbia River chinook salmon ESU is anticipated or authorized. The harvest rate on the summer component of the Snake River spring/summer chinook salmon ESU and Upper Willamette River spring chinook salmon ESU will not exceed 5% and 0.5%, respectively. The harvest rate limit for Snake River sockeye salmon in the tribal fisheries is 7%. Harvest rates for Lower Columbia River steelhead, Middle Columbia River steelhead, and Snake River Basin steelhead ESUs will not exceed 4.9%, 7.7%, and 5.7%, respectively. No take of Upper Willamette River steelhead is expected. The harvest rate limits for Upper Columbia River hatchery and natural-origin steelhead are 5.6% and 7.6%, respectively.

Except for Upper Columbia River spring chinook and Snake River spring chinook salmon, the anticipated harvest rate limits for the state fisheries are also summarized in Table 14 of the 2001 Opinion (NMFS 2001). Harvest rates in the proposed state fisheries for Lower Columbia River spring chinook will not exceed 12%. The harvest rate limits for Snake River summer chinook and sockeye salmon are both 1%. Harvest rates for natural-origin steelhead from the Lower Columbia River, Upper Willamette River, Middle Columbia River, Upper Columbia River, and Snake River Basin ESUs may not exceed 2%. The harvest rate limit for Upper Columbia River hatchery-origin steelhead is 6%.

The expected impacts are based on the pre-season run size projection, provided for each run by the TAC. The TAC will update the runsize projections inseason each year as information from fisheries and dam counts becomes available. The actual number of listed fish which can be incidentally harvested will change accordingly each year. It is the applicable harvest rate limits, and not a static number of listed fish, that defines the limit of allowable mortality in these fisheries. A post-season report, based on catch and the observed run size, will also be provided by TAC. Inseason monitoring will occur to ensure that fishery-specific impacts, applied to inseason updates of the run-size projection whenever possible, do not deviate substantially from expectation.

During this consultation, NMFS also considered the mortality that may occur associated with research, monitoring, and evaluation activities that are designed to minimize incidental take resulting from implementation of selective fisheries. Mortality associated with the research and monitoring activities planned in 2003 is not expected to exceed a rate of 0.2% of natural-origin UCR or Snake River spring chinook salmon, in particular, or other listed ESUs in general.

The research program initiated in 2001 is intended to be a multi-year effort. The research continues in 2003 and may continue in future years during the term of the Agreement. Mortality associated with the research will be kept to a minimum, but, in order to provide an upper limit of impacts, may not exceed an annual rate of 0.5% of any natural-origin component of a listed ESU.

8.2 Reasonable and Prudent Measures

NMFS believes that the reasonable and prudent measure(s) described in the original Incidental Take Statement are necessary and appropriate to minimizing take of Columbia River Basin salmonids listed or proposed for listing, and therefore remain valid for this supplemental Biological Opinion, with the exception of RPM number two. The RPM number two was modified specifically to include language about winter steelhead and long-term mortality estimates; the revised RPM number two is included below.

It is essential that inseason management measures taken during the course of the fisheries be consistent with the Agreement (U.S. v Oregon parties 2001). In order to implement these measures, it is necessary to monitor both run size and catch during the season. Information on

stock composition is necessary to assess impacts on listed fish, and provide timely indications of changes in the assumptions about species proportions, conversion rates, and age compositions used to develop these harvest objectives. To assure conformity with the specified harvest rates and to provide information necessary for monitoring stock utilization and performance, the following reasonable and prudent measures are established.

1. ODFW and WDFW shall manage the commercial spring chinook fishery to minimize harvest impacts on listed salmonids.

2. Parties to the Interim Agreement shall provide preseason information necessary to manage the commercial spring chinook fishery as proposed. This information includes preseason runsize estimate for natural-origin winter steelhead and catch-and-release long-term mortality for spring chinook and steelhead associated with the gear used in the non-Indian commercial spring chinook fishery.

3. Parties to the Interim Agreement shall monitor salmonid passage at Columbia River dams, and TAC shall provide updates to run size projections.

4. ODFW and WDFW shall monitor the catch for all Zone 1-5 commercial and recreational fisheries, and Zone 6 commercial fisheries.

5. Parties to the Interim Agreement shall implement a research, monitoring, and evaluation program to further develop selective fishery strategies to reduce impacts on listed fish and provide alternative harvest opportunities. Results from all research, monitoring, and evaluation work done in conjunction with the development and assessment of selective fisheries shall be reported to NMFS by the management agency conducting the activity.

8.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the action agencies must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

The terms and conditions described in the original Incidental Take Statement remain valid for this supplemental Biological Opinion, with the exception of term and condition number two. The additional language in the term and condition number two, as updated below, reflects changes in the RPM number two.

1a. ODFW and WDFW shall manage their commercial spring chinook fishery to keep harvest rates within the above described limits, based on TAC's preseason projections of run size and any subsequent inseason updates.

1b. The non-Indian commercial spring chinook tangle-net selective fishery will be managed using a harvest rate cap for winter steelhead that is less than 2% to allow for anticipated recreational fishery impacts and provide a buffer for management uncertainty.

1c. Large mesh nets (8-inch minimum mesh) may be used to minimize the encounter rate for steelhead. Alternatively, tangle nets with a maximum mesh size of 4 1/4-inch mesh will be used to minimize the mortality rate associated with steelhead encounters. Voluntary use of steelhead excluders by the commercial fishers will be encouraged.

1d. In 2003, TAC recommended using a 35% long-term mortality rate for 8-inch mesh and a 20% for the 4 1/4 inch mesh for winter steelhead in the non-Indian commercial spring chinook tangle-net selective fishery. TAC will review 2003 long-term survival study results and use these to modify the mortality estimatesif necessary for use in 2004 and beyond.

1e. Use of recovery boxes, short soak times, and reduced net length are mandatory.

2a. The parties to the Interim Agreement are responsible for providing preseason forecasts of run size necessary to manage the commercial spring chinook fishery as proposed. These shall be provided annually to NMFS by the TAC by December 15 of each year, for fisheries starting on January 1st the following year.

2b. ODFW and WDFW shall also provide to NMFS annually a Table equivalent to Table 14 in this opinion that reports the expected total mortality rates in state fisheries for each listed ESU. The Table shall be provided to NMFS by December 15 of each year and will be used by NMFS to assess continued compliance with the proposed action.

3a. Parties to the Interim Agreement shall monitor dam counts and other available information to develop inseason updates to run size estimates for Upriver spring chinook salmon. All revisions to preseason information shall be report to NMFS by TAC as they become available. The inseason information is necessary to ensure continued compliance with the proposed action.

3b. Maximum allowable mortality rates used to plan fisheries will be based on a percentage of this preseason runsize estimate as applicable

3c. In 2003, estimates of impacts on wild winter steelhead in the non-Indian commercial spring chinook tangle-net selective fishery are based on the preseason run size information, the assumption that 5%-25% of the steelhead caught are

summer-run fish, and that 3.5% of the unmarked steelhead are hatchery-origin fish. Summer steelhead are assumed to range from 5% of the catch in February to 25% of the catch in late March. These estimates may be updated based on new information, but similar procedures will be used for estimating harvest impacts.

4a. Monitoring of catch in all Zone 1-5 fisheries by ODFW and WDFW shall be sufficient to provide statistically-valid estimates of the salmonid catch. Sampling of the commercial catch shall include daily contact with buyers regarding the catch of the previous day. The recreational fishery shall be sampled using effort surveys and suitable measures of catch rate. Monitoring of catch in the Zone 6 fisheries by ODFW and WDFW shall be sufficient to provide statistically-valid estimates of the salmonid catch. The monitors were on-board the commercial boats and collect a variety of data, including numbers of steelhead and spring chinook handled, mark rate, condition at capture, and condition at release.

4b. Results from the catch monitoring will be reported to NMFS by TAC periodically as necessary to ensure that the catch remains within the prescribed harvest rate limits. Periodically may mean weekly or more often during active fishing periods. Data were summarized the day following each fishing period and reported to the fishery managers and the TAC.

4c. The TAC shall account for the catch of each fishery as it occurs through the season. If it becomes apparent inseason that any of the established harvest rate limits may be exceeded due to catch or revisions in the run-size projection, then the states and tribes shall take additional management guidelines to reduce the anticipated catch as needed to conform to the limits.

4d. In 2003, WDFW continued to study the long-term mortality rate for spring chinook as well as investigating long-term mortality rates for steelhead. These data and the results of subsequent studies will be analyzed and used for managing fisheries in 2004 and beyond.

5a. ODFW, WDFW, and the treaty tribes shall ensure that shad experimental fisheries are devised in ways such that indirect effects not accounted for in the harvest rate ceilings, such as passage delay, are negligible. Treaty and non-treaty shad fisheries shall be adequately monitored to account for all salmonid impacts. Before fisheries take place in or near dam passage facilities, a proposal for each fishery shall be coordinated through NMFS, the U.S. Army Corps of Engineers (USACE), and the Fish Passage Advisory Committee (FPAC). Nets used in shad fisheries shall not occlude more than the top half of the water column, nor shall they substantially obstruct any exit from adult fish passage routes. No shad fishery shall occur within any operating adult salmon fishway.

5b. Monitoring of shad fisheries shall be sufficient to detect, on a timely basis, the impedance of adult salmonid passage. Methods to evaluate such impedance require development, but may include information from radio-tagging studies, dam counts, or other direct observations. Descriptions of proposed shad fisheries shall include specific adult passage delay evaluation methods. If noticeable passage delay occurs as a result of experimental shad fisheries, those fisheries shall be suspended, or altered in such a way as to eliminate passage delay. Such fishery alterations shall also be reviewed by NMFS, the USACE, and the FPAC, and approved by NMFS.

6. The development and implementation of selective fishing methods provides a means to further minimize the incidental take of listed fish. Research, monitoring, and evaluation activities are necessary to develop and assess new selective fishing techniques. The activities also are needed to determine how the gear can be used to maximize catch and minimize the associated incidental mortality of released fish. A further objective is to measure the associate handling mortality so that the effects of using the gear can be correctly assessed. To be useful, the information gathered must be reported and synthesized in an organized manner. The results from all such activities shall therefore be reported to NMFS by TAC which will serve a reporting and coordination function in this regard. The state, tribe, or other entity responsible for each assessment activity shall provide an initial summary of its results to TAC and NMFS within one month of the completion of the associated field work. TAC must then provide to NMFS an annual summary of the results from all related projects by October 31 of each year.

NMFS believes that incidental take resulting from the proposed fisheries will be no greater than described in section 8.1, above. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, or impacts are incurred disproportionately on any component of the aggregate return in a manner not considered here, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided, as described in section 10.0, below. In such a case, the agencies must immediately provide an explanation of the causes of the excess taking, and review with the NMFS the need for possible modification of the reasonable and prudent measures.

9.0 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop additional information. NMFS here reiterates the conservation

recommendations provided in the original opinion are consistent with these obligations, and therefore should be implemented:

1. It would be useful to have a method for updating the expected return of natural-origin spring chinook and steelhead inseason so that harvest can be more responsive to the status of the stock. NMFS therefore recommends that TAC explore the options for developing such a method.

2. The harvest rate schedule in Table 13 identifies abundance levels for the Snake River spring chinook and UCR spring chinook salmon that are used as indicators of stock status for the purpose of setting target harvest rates. NMFS should review the abundance levels used in the harvest rate schedule and develop similar indicators for other key stocks that can be used as bench marks for considering future fishery proposals. Guidance provided in the VSP paper should be used to help set critical and recovery abundance targets.

3. For the most part, listed salmonids passing through the Columbia River mainstem upstream of Bonneville Dam during the winter represent natural-origin fish. With the exception of the Wells Hatchery stock of Upper Columbia River steelhead and some Snake River chinook stocks, salmonids of hatchery-origin are unlisted. The catch-and-release mortality rates for the tangle-net fishery techniques is being studied. The live release of unmarked salmonids, especially steelhead, may provide a tool for decreasing impacts on listed fish and allow for meaningful and possibly increased harvest opportunity.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, NMFS requests notification of the implementation of any conservation recommendations.

10.0 REINITIATION OF CONSULTATION

This concludes formal consultation on the additional management guidelines proposed to be incorporated into the Agreement. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take specified in the Incidental Take Statement is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect on to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, section 7 consultation must be immediately reinitiated.

11.0 MAGNUSON-STEVENS ACT ESSENTIAL FISH HABITAT CONSULTATION

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2));
- NMFS must provide conservation recommendations for any Federal or State action that would adversely affect EFH (§305(b)(4)(A));
- Federal agencies must provide a detailed response in writing to NMFS within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NMFS is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects on EFH.

11.1 Identification of Essential Fish Habitat

Pursuant to the MSA, the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies

currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects on these species' EFH from the proposed action is based, in part, on this information.

11.2 Proposed Action and Action Area

There is no new action being considered in this EFH consultation. NMFS reinitiated its consultation of the 2001 Agreement in order to describe in more detail how the non-Indian commercial spring chinook fishery will be managed to stay within the incidental take limits for steelhead without losing sight of spring chinook constraints.

The action area includes the Columbia River zones 1-5. The action area includes habitats that have been designated as EFH for various life-history stages of chinook and coho salmon. A more detailed description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts on these species' EFH from the above proposed action is based on this information.

11.3 Effects of the Proposed Action

Based on information submitted WDFW and ODFW, as well as NMFS' analysis in the ESA consultation above (see particularly section 4.1), NMFS believes that the effects of this action on EFH are likely to be within the range of effects considered in the ESA portion of this consultation.

11.4 Conclusion

Using the best scientific information available and based on its ESA consultation above, as well as the foregoing EFH sections, NMFS has determined that the proposed actions are not likely to adversely affect Pacific salmon EFH.

11.5 EFH Conservation Recommendation

Pursuant to Section 305(b)(4)(A) of the MSA, NMFS is required to provide EFH conservation recommendations to Federal agencies regarding actions which may adversely affect EFH. Because NMFS has determined that the proposed action is not likely to adversely affect EFH for Pacific salmon, NMFS has not identified any EFH conservation recommendations, and no statutory response is required at this time.

11.6 Consultation Renewal

The action agencies must reinitiate EFH consultation if plans for these actions are substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for the EFH conservation recommendations (50 CFR Section 600.920(k)).

12.0 REFERENCES

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